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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BELL, BOYD & LLOYD LLP P.O. BOX 1135 CHICAGO, IL 60690			EXAMINER WONG, LINDA	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 11/02/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/821,300

Applicant(s)

SUN ET AL.

Examiner

Linda Wong

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 and 25-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-8, 18-20, 21-24 in the reply filed on 10/10/2007 is acknowledged.

Drawings

2. The drawings were received on 4/9/2004. These drawings are accepted.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 7,8** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
 - a. **Claim 7** recites the limitation "process a same bit in each received byte". The examiner is uncertain as to the reference of "a same bit in each received byte". Based on the specification, Fig. 5 shows the multiple coders receive 1 bit of the received stream of data or received byte but the bits are not the same.

Furthermore, encoding a stream of data is to encode every bit, thus why would one skilled in the art use multiple encoders to encode "the same bit of the received byte"?

- b. **Claim 8** recites the same limitation. Please refer to the rejection of claim 7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1,3-4,18,21,24** are rejected under 35 U.S.C. 102(e) as being anticipated by Sinhdhushayana, et al (US Publication No.: 20030007487).

a. **Claim 1,**

i. Sinhdhushayana et al discloses

- "a first coder configured to receive at least one first data stream, and generate a plurality of data packets based on the received at least one first data stream, the plurality of data packets representing redundant data packets" (Fig. 2a, label 204, paragraph 51 discloses the data source, label 202, provides information signals divided in to N blocks,

each block with K bytes, Fig. 2d, packet 1-N is being outputted by Ec1 and received by Ec2 as shown in Fig 2a)

- “a second coder configured to receive the at least one first data stream and the redundant data packets, generate parity information for the received at least one first data stream and the redundant data packets, and output a second data stream comprising the at least one first data stream, the plurality of redundant packets and the parity information” (Fig. 2a, label 206 receives the plurality of packets from EC1 and Fig. 2d shows the packets are inputted into 206 or EC2, paragraph 54 discloses each encoded packet comprise N systematic bytes and N' parity bytes, wherein the systematic bytes comprises data block 220 and encoded with systematic code C4)
 - “logic configured to modulate the second data stream, and forward the modulated data”. (paragraph 45 discloses performing modulation)
- b. **Claim 3**, Sindhushayana et al discloses “the first coder is configured to generate a first number of redundant data packets for each second number of payload data packets”. (Fig. 2d, encoder 1 produces N number of packets and encoder 2 outputs N+N' number of packets)
- c. **Claim 4**, Sindhushayana et al discloses “the first number is four and the second number is 97”. (Fig. 2d, encoder 1 produces N number of packets and encoder 2 outputs N+N' number of packets, wherein the number of packets depend on N and N+N')

d. **Claims 18,21,**

i. Sindhushayana et al discloses

- “means for receiving a first data stream; (Fig. 2a, label DS, paragraph 51)
- “means for generating a plurality of redundant data packets based on the first data stream” (Fig. 2a, label 204)
- “means for generating parity information for the first data stream and the redundant data packets” (Fig. 2d, labels 220,222, paragraphs 52,54)
- “means for forming data packets comprising the first data stream, the redundant data packets and the parity information” (paragraph 58, Fig. 2d, label 224)
- “means for modulating the data packets”; (paragraph 45 discloses performing modulation)
- “means for transmitting the modulated data packets” (Fig. 2a, label tx)

- e. **Claim 24**, Sindhushayana et al discloses “the redundant packets are processed by the distribution device in a same manner as the plurality of data packets”. (Fig. 1a, shows the receiver and transmitter, wherein the decoder resembles the process of the encoder.)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Sindhushayana et al (US Publication No.: 20030007487) in view of Gilhousen et al (US Patent No.: 4901307).

a. **Claim 2,**

- i. Sindhushayana et al discloses "a transmitter configured to receive the modulated data, and transmit the modulated data". (Fig. 1a, label 112 indicates transmission)
- ii. Sindhushayana et al fails to disclose transmitting to a "satellite". Gilhousen et al disclose transmitting to satellite or terrestrial repeaters. (Fig. 2) It would have been obvious to one skilled in the art at the time of the invention to transmit to a satellite as disclosed by Gilhousen et al into Sindhushayana et al's invention so to provide communication to a satellite device as well as terrestrial, thus increasing robustness.

6. **Claims 5,6** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sindhushayana et al (US Publication No.: 20030007487) in view of Eidson et al (US Publication No.: 20010025358).

a. **Claim 5,**

- i. Sindhushayana et al fails to disclose
 - “an interleaver configured to receive video input data and output the at least one first data stream”.
 - ii. Eidson et al discloses such a limitation. (Fig. 1, label interleaver) It would have been obvious to one skilled in the art at the time of the invention to incorporate such a limitation as disclosed by Eidson et al into Sindhushayana et al's invention so to shuffle the signal bit order to reduce the susceptibility of the system to burst noise.
- b. **Claim 6**, Sindhushayana et al discloses “the at least one first data stream comprises 12 data streams”. (paragraph 51 discloses the information signal is divided into N blocks, wherein N blocks can be 12 to produce 12 data streams)
7. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhushayana et al (US Publication No.: 20030007487) in view of Wang et al (US Patent No.: 5052000).
- a. **Claim 7**,
- i. Sindhushayana et al fails to disclose
 - “the first coder comprises a plurality of coders, each of the plurality of coders configured to process a same bit in each received byte of the at least one first data stream”.
 - ii. Wang et al discloses such a limitation. (Fig. 2, label 206-1 to 206-M) It would have been obvious to one skilled in the art to incorporate multiple

coders as disclosed by Wang et al into the coder as disclosed by Sindhushayana et al so to increase immunity of information signal to the presence of noise.

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhushayana et al (US Publication No.: 20030007487) in view of Wang et al (US Patent No.: 5052000), further in view of Eidson et al (US Publication No.: 20010025358).

a. **Claim 8,**

- i. Sindhushayana et al in view of Wang et al fails to disclose
 - A. "a buffer configured to store a block of data, the block of data representing the same bit in each byte of a data packet", and
 - B. "logic configured to cyclically shift the contents of the buffer based on an index associated with the stored block of data",
 - C. "binary sum a first bit of the buffer with each other bit in the buffer, and output a plurality of bits based on the binary summing".
- ii. Eidson et al discloses such a limitation. (Limitation A: Fig. 3, label 300,302 as the shift register or buffer for storing the data. Limitation B: paragraph 59 describes the encoder's functionality, wherein the shift register will shift the bits based on clock as shown in Fig. 3. Paragraph 92 discloses the encoder as a cyclic redundancy check encoder. Limitation C: Fig. 3 shows the summation.) It would have been obvious to one skilled in the art to provide

an encoder as disclosed by Eidson et al into Sindhushayana et al's invention so to provide cyclic redundancy check.)

9. **Claims 19,22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhushayana et al (US Publication No.: 20030007487) in view of Zhou et al (US Publication No.: 20040179606).

a. **Claims 19,22,**

i. Sindhushayana et al discloses

- "means for receiving the modulated data packets" (Fig. 2a, labels 112,214)
- "means for demodulating and decoding the modulated data packets" (Fig. 2a, label dc as the decoder, paragraph 60)

ii. Sindhushayana et al fails to disclose

- "means for re-encoding the decoded data packets" and
- "means for transmitting the re-encoded data packets".

iii. Zhou et al discloses such limitations. (Limitation A: Fig. 3, label re-encode reduced bit-plane blocks; Limitation B: label Transmit bit-plane) It would have been obvious to one skilled in the art at the time of the invention to incorporate such limitations as disclosed by Zhou et al into Sindhushayana et al so to reduce the bit rate to match the available bit rate for transmission. (paragraph 0021)

- b. **Claim 23**, Sindhushayana et al discloses "the distribution device comprises a satellite and the plurality of redundant data packets increase an error correction capability at the plurality of locations". (paragraph 5 discloses satellite and Fig. 1a shows a decoder, wherein the use of a decoder would increase error correction.)

10. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhushayana et al (US Publication No.: 20030007487) in view of Zhou et al (US Publication No.: 20040179606), further in view of Eidson et al (US Patent No.: 20010025358).

a. **Claim 20**,

- i. Sindhushayana et al in view of Zhou et al discloses all the limitations as recited in claim 19, but fails to disclose the limitations recited in claim 20.
- ii. Eidson et al discloses
 - "Means for receiving the re-encoded data packets" (Fig. 1, label Receiver)
 - "Means for decoding the re-encoded data packets" (Eidson et al discloses a transceiver as shown in Fig. 1, thus Eidson et al's system can receive data and decode the data, labels 106,118)
 - "Means for determining that an error occurred in a first data packet"; (Fig. 2, label decoding/success failure indication)

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- "Means for generating an index value associated with the first data packet" (Fig. 2, label 210, wherein a Reed-Solomon Decoder generates an index value. Please refer to the reference EP 0874466 for further background on such an encoder.) and
- "means for recovering the first data packet using the index value". (Fig. 2, output of label 230)
- It would have been obvious to one skilled in the art at the time of the invention to incorporate Eidson et al into Sindhushayana et al in view of Zhou et al so to better decipher transmitted information.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Linda Wong

10/18/2007


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